

## RAW SEQUENCE LISTING

**The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.**

Application Serial Number: 10/563,686  
Source: IFWP  
Date Processed by STIC: 1-19-06

# ***ENTERED***



IFWP

## RAW SEQUENCE LISTING

DATE: 01/19/2006

PATENT APPLICATION: US/10/563,686

TIME: 13:20:35

Input Set : A:\54-000330US.ST25.txt

Output Set: N:\CRF4\01192006\J563686.raw

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3 <110> APPLICANT: Anderson, J C
4     Wu, Ning
5     Santoro, Stephen
6     Schultz, Peter G
8 <120> TITLE OF INVENTION: COMPOSITIONS OF ORTHOGONAL LYSYL-tRNA AND AMINOACYL-tRNA
9     SYNTHETASE PAIRS AND USES THEREOF
11 <130> FILE REFERENCE: 54-000330PC
C--> 13 <140> CURRENT APPLICATION NUMBER: US/10/563,686
C--> 14 <141> CURRENT FILING DATE: 2006-01-06
16 <160> NUMBER OF SEQ ID NOS: 37
18 <170> SOFTWARE: PatentIn version 3.2
20 <210> SEQ ID NO: 1
21 <211> LENGTH: 78
22 <212> TYPE: RNA
23 <213> ORGANISM: Pyrococcus abyssi
25 <400> SEQUENCE: 1
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28 auctcccccg gcccgccca                                                    78
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32 <211> LENGTH: 78
33 <212> TYPE: RNA
34 <213> ORGANISM: Pyrococcus furiosus
36 <400> SEQUENCE: 2
37 gggccgguag cuuagccugg uuagagcggc ggacucuuaa uccgcagguc ggggggucaa      60
39 auctcccccg gcccgccca                                                    78
42 <210> SEQ ID NO: 3
43 <211> LENGTH: 78
44 <212> TYPE: RNA
45 <213> ORGANISM: Pyrococcus horikoshii
47 <400> SEQUENCE: 3
48 gggccgguag cuuagccugg uuagagcggc ggacucuuaa uccgcagguc ggggggucaa      60
50 auctcccccg gcccgccca                                                    78
53 <210> SEQ ID NO: 4
54 <211> LENGTH: 78
55 <212> TYPE: RNA
56 <213> ORGANISM: Pyrococcus abyssi
58 <400> SEQUENCE: 4
59 gggccgguag cucagccugg ucagagcacc gggcuuuuaa cccggugguc gcgggucaa      60
61 auctccgccc gcccgccca                                                    78
64 <210> SEQ ID NO: 5
65 <211> LENGTH: 78
66 <212> TYPE: RNA
67 <213> ORGANISM: Pyrococcus horikoshii

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69 <400> SEQUENCE: 5
70 gggccgguag cucagccugg ucagagcacc gggcuuuuaa cccggugguc gcggguucaa 60
72 aucccgcccg gcccgcca 78
75 <210> SEQ ID NO: 6
76 <211> LENGTH: 78
77 <212> TYPE: RNA
78 <213> ORGANISM: Pyrococcus furiosus
80 <400> SEQUENCE: 6
81 gggccgguag cucagccugg uuagagcacc gggcuuuuaa cccggugguc gcggguucaa 60
83 aucccgcccg gcccgcca 78
86 <210> SEQ ID NO: 7
87 <211> LENGTH: 78
88 <212> TYPE: RNA
89 <213> ORGANISM: Pyrobaculum aerophilum
91 <400> SEQUENCE: 7
92 gggcccgguag cucagcccgg uuagagcggc gggcuuuuaa cccguagguc guggguucga 60
94 auccaccgg gcccgcca 78
97 <210> SEQ ID NO: 8
98 <211> LENGTH: 77
99 <212> TYPE: RNA
100 <213> ORGANISM: Thermoplasma acidophilum
102 <400> SEQUENCE: 8
103 ggguccguag cuuagcuagg uagagcgaug gacucuuaau ccuagguca gggguccaaa 60
105 uccccucgga cccgcca 77
108 <210> SEQ ID NO: 9
109 <211> LENGTH: 77
110 <212> TYPE: RNA
111 <213> ORGANISM: Thermoplasma volcanium
113 <400> SEQUENCE: 9
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116 uccccucgga cccgcca 77
119 <210> SEQ ID NO: 10
120 <211> LENGTH: 77
121 <212> TYPE: RNA
122 <213> ORGANISM: Archaeoglobus fulgidus
124 <400> SEQUENCE: 10
125 gggccgguag cuuagccagg cagagcgcg gacucuuaau cccgcagucg gggguucaaa 60
127 ucccuucccg cccgcca 77
130 <210> SEQ ID NO: 11
131 <211> LENGTH: 77
132 <212> TYPE: RNA
133 <213> ORGANISM: Halobacterium sp. NRC-1
135 <400> SEQUENCE: 11
136 gggccgguag cucagucugg cagagcgacg gacucuuaau ccgucggucg cguguucaaa 60
138 ucgcgcccgg cccgcca 77
141 <210> SEQ ID NO: 12
142 <211> LENGTH: 77
143 <212> TYPE: RNA
144 <213> ORGANISM: Thermoplasma acidophilum

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146 <400> SEQUENCE: 12
147 gggcccguag cucagccagg uagagcaucu ggcuuuuuac caggugguca gggguucgaa      60
149 ccccucggg cccgcca                                                         77
152 <210> SEQ ID NO: 13
153 <211> LENGTH: 77
154 <212> TYPE: RNA
155 <213> ORGANISM: Thermoplasma volcanium
157 <400> SEQUENCE: 13
158 gggcccguag cucagccagg uagagcaucu ggcuuuuuac caggugguca gggguucgaa      60
160 ccccucggg cccgcca                                                         77
163 <210> SEQ ID NO: 14
164 <211> LENGTH: 77
165 <212> TYPE: RNA
166 <213> ORGANISM: Methanococcus jannaschii
168 <400> SEQUENCE: 14
169 gggcccguag cucagucugg cagagcgccu ggcuuuuuac cagguggucg aggguucaaa      60
171 ucccuucggg cccgcca                                                         77
174 <210> SEQ ID NO: 15
175 <211> LENGTH: 77
176 <212> TYPE: RNA
177 <213> ORGANISM: Methanobacterium thermoautotrophicum
179 <400> SEQUENCE: 15
180 gggcccguag cucagucugg cagagcgccu ggcuuuuuac caaguggucg cggguucaau      60
182 ucccgucggg cccgcca                                                         77
185 <210> SEQ ID NO: 16
186 <211> LENGTH: 77
187 <212> TYPE: RNA
188 <213> ORGANISM: Methanosarcina mazeii
190 <400> SEQUENCE: 16
191 gggcccguag cuuagucugg uagagcgccu gacuuuuuau caggcgguucg agggguucgaa      60
193 ucccuucggg cccgcca                                                         77
196 <210> SEQ ID NO: 17
197 <211> LENGTH: 77
198 <212> TYPE: RNA
199 <213> ORGANISM: Sulfolobus tokodaii
201 <400> SEQUENCE: 17
202 gggcccguag cucagccagg uagagcgggc ggcucuuaac ccguaggucc cggguucaaa      60
204 ucccgggcggg cccgcca                                                         77
207 <210> SEQ ID NO: 18
208 <211> LENGTH: 77
209 <212> TYPE: RNA
210 <213> ORGANISM: Sulfolobus tokodaii
212 <400> SEQUENCE: 18
213 gggcccguag cucagccagg uagagcgggc ggcuuuuuac ccguaggucc cggguucaaa      60
215 ucccgggcggg cccgcca                                                         77
218 <210> SEQ ID NO: 19
219 <211> LENGTH: 77
220 <212> TYPE: RNA
221 <213> ORGANISM: Pyrobaculum aerophilum

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Input Set : A:\54-000330US.ST25.txt

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223 <400> SEQUENCE: 19
224 gggcccguag cucagccugg uagagcggcg ggcucuuaac ccguaggucg uggguucgaa      60
226 ucccaccggg cccgcca                                                         77
229 <210> SEQ ID NO: 20
230 <211> LENGTH: 77
231 <212> TYPE: RNA
232 <213> ORGANISM: Archaeoglobus fulgidus
234 <400> SEQUENCE: 20
235 gggcucguag cucagccagg cagagcgacg ggcuuuuaac ccgucggucg cggguucaaa      60
237 ucccgucgag cccgcca                                                         77
240 <210> SEQ ID NO: 21
241 <211> LENGTH: 76
242 <212> TYPE: RNA
243 <213> ORGANISM: Sulfolobus solfataricus
245 <400> SEQUENCE: 21
246 gggcccguag cuuagccagg uagagcgacg ggcucuuaac ccguaguccc gggguucgaau      60
248 cccggcgggc cccgcca                                                         76
251 <210> SEQ ID NO: 22
252 <211> LENGTH: 79
253 <212> TYPE: RNA
254 <213> ORGANISM: Aeropyrum pernix
256 <400> SEQUENCE: 22
257 gggcccguag cucagccugg uagagcggcg ggcucuuaac ccgcggaagu cccggguuca      60
259 aaucccggcg ggcccgcca                                                         79
262 <210> SEQ ID NO: 23
263 <211> LENGTH: 80
264 <212> TYPE: RNA
265 <213> ORGANISM: Artificial
267 <220> FEATURE:
268 <223> OTHER INFORMATION: consensus tRNA
271 <220> FEATURE:
272 <221> NAME/KEY: misc_feature
273 <222> LOCATION: (36)..(36)
274 <223> OTHER INFORMATION: n indicates no consensus (u or c)
276 <220> FEATURE:
277 <221> NAME/KEY: misc_feature
278 <222> LOCATION: (43)..(43)
279 <223> OTHER INFORMATION: n indicates no consensus (gap or c)
281 <220> FEATURE:
282 <221> NAME/KEY: misc_feature
283 <222> LOCATION: (44)..(44)
284 <223> OTHER INFORMATION: n indicates no consensus (gap or g)
286 <400> SEQUENCE: 23
W--> 287 gggcccguag cucagccugg uuagagcggc gggcunuuuaa ccnncggagg ucgcggguuc      60
289 aaaucccgcc gggcccgcca                                                         80
292 <210> SEQ ID NO: 24
293 <211> LENGTH: 77
294 <212> TYPE: RNA
295 <213> ORGANISM: Artificial

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Input Set : A:\54-000330US.ST25.txt

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297 <220> FEATURE:
298 <223> OTHER INFORMATION: consensus-derived tRNA AKCUA
300 <400> SEQUENCE: 24
301 gggcccguag cucagccugg uagagcggcg ggcucuaaac cgcagguccg cggguuacaa 60
303 ucccgcgggg cccgccca 77
306 <210> SEQ ID NO: 25
307 <211> LENGTH: 78
308 <212> TYPE: RNA
309 <213> ORGANISM: Artificial
311 <220> FEATURE:
312 <223> OTHER INFORMATION: consensus-derived tRNA library
315 <220> FEATURE:
316 <221> NAME/KEY: misc_feature
317 <222> LOCATION: (1)..(4)
318 <223> OTHER INFORMATION: n is a, c, g or u
320 <220> FEATURE:
321 <221> NAME/KEY: misc_feature
322 <222> LOCATION: (71)..(74)
323 <223> OTHER INFORMATION: n is a, c, g or u
325 <400> SEQUENCE: 25
W--> 326 nnnnccguag cucagccugg uagagcggcg ggcuccuaa cccgcagguc gcggguacaa 60
W--> 328 aucccgcggg nnnngcca 77
331 <210> SEQ ID NO: 26
332 <211> LENGTH: 78
333 <212> TYPE: RNA
334 <213> ORGANISM: Artificial
336 <220> FEATURE:
337 <223> OTHER INFORMATION: mutant tRNA
339 <400> SEQUENCE: 26
340 ugguccguag cucagccugg uagagcggcg ggcuccuca cccgcagguc gcggguacaa 60
342 aucccgcggg acuagcca 77
345 <210> SEQ ID NO: 27
346 <211> LENGTH: 1092
347 <212> TYPE: DNA
348 <213> ORGANISM: Artificial
350 <220> FEATURE:
351 <223> OTHER INFORMATION: mutant tRNA synthetase
353 <400> SEQUENCE: 27
354 atggttcatt gggccgatta tattgctgat aaaataatta gagagagggg ggagaaggag 60
356 aagtacgttg ttgagagtgg aataacgccca agtgggttacg ttcacgttgg gaactttagg 120
358 gagcttttta cagcttatat tgtgggcat gccctaaggg ataaggggta tgaggttagg 180
360 cacatccaca tgtgggatga ttatgataga tttaggaagg ttccaaggaa cgttccccag 240
362 gaatggaaag attacctggg aatgccatt agtgaagttc ctgatccctg gggatgccat 300
364 gagagttatg ctgaacactt catgagaaag ttcgaggagg aggtagaaaa attagggatc 360
366 gaagttgact ttctttatgc gagtgaactc tacaagagag gggaaatattc tgaggagata 420
368 aggttagcct ttgagaaaag ggataagata atggagatac taaacaagta tagggaaatt 480
370 gcgaaacaac ctcccccttc agagaactgg tggcccgcaa tggtttactg ccctgagcat 540
372 aggaggggaag cagagatcat tgaatgggat gggggctgga aggttaagta taagtgcgcc 600
374 gaaggtcacg agggatgggt tgatataagg agtgggaacg tgaaactgag gtggcgtggt 660

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RAW SEQUENCE LISTING ERROR SUMMARY  
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Input Set : A:\54-000330US.ST25.txt  
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:23; N Pos. 36,43,44 ✓

Seq#:25; N Pos. 1,2,3,4,71,72,73,74 ✓

Seq#:31; N Pos. 3749,3769

Seq#:32; N Pos. 3750,3770

Seq#:33; N Pos. 3274,3294

Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete, per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:23,24,25,26,27,28,29,30,31,32,33,34,35,36,37

**VERIFICATION SUMMARY**

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Input Set : A:\54-000330US.ST25.txt

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L:13 M:270 C: Current Application Number differs, Replaced Current Application Number  
L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date  
L:287 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:0  
L:326 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 after pos.:0  
L:328 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 after pos.:60  
L:845 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31 after pos.:3720  
L:1028 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32 after pos.:3720  
L:1195 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:33 after pos.:3240